ASSIGNMENT - 01

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SUBJECT	:REACT

TOPICS TO BE COVERED IN THIS PRESENTATION ARE :

- FUNCTIONS IN JAVASCRIPT
- DOM CREATION
- MODULES
- LOOPS

FUNCTIONS IN JAVASCRIPT

- A JavaScript function is a block of code designed to perform a particular task.
- A JavaScript function is executed when "something" invokes it (calls it).

For Example:

```
// Function to compute the product of p1 and p2

function myFunction(p1, p2)
{
  return p1 * p2;
}
```

FAHRENHEIT TO CELSIUS

```
<!DOCTYPE html>
<html>
<body>
<h1>JavaScript Functions</h1>
<p id="demo"></p>
<script>
function toCelsius(f) {
  return (5/9) * (f-32);
}
let value = toCelsius(77);
document.getElementById("demo").innerHTML = value;
</script>
</body>
</html>
```

OUTPUT

- 25

EXPLANATION:

- This HTML document contains a JavaScript Function that defines how to convert Fahrenheit to Celsius. The script calculates and displays the equivalent Celsius temperature for 77 degrees Fahrenheit in the paragraph with id "demo."

➢ DOM(DOCUMENT OBJECT MODEL)

- The Document Object Model (DOM) is a programming interface for web documents.
- It represents the page so that programs can change the document structure, style, and content.
- The DOM represents the document as nodes and objects; that way, programming languages can interact with the page.

DOM EXAMPLE:

```
<!DOCTYPE html>
<html>
<body>

<p id="demo">What is your favorite color?</p>

<script>
// JavaScript code to change the content of the paragraph with id "demo"
document.getElementById("demo").innerHTML = "My favorite color is blue!";
</script>

</body>
</html>
```

OUTPUT:

- The output of this HTML document, when viewed in a web browser, will be:

What is your favorite color?

- However, after the JavaScript code is executed, the content of the paragraph with id "demo" will be dynamically changed to:

My favorite color is blue!

EXPLANATION:

- This HTML document uses the Document Object Model (DOM) in JavaScript to dynamically change the content of a paragraph. The script, when executed, selects the HTML element with the id "demo" and updates its content to say "My favorite color is blue!" instead of the initial question.

MODULES IN JAVASCRIPT:

- JavaScript modules allow you to break up your code into separate files.

- This makes it easier to maintain a code-base.

- Modules are imported from external files with the `import` statement.

- Modules also rely on `type="module"` in the <script> tag.

```
// This is a Rectangle Module.
    function Rectangle() {
        var length, width;
        function create(l, w) {
            length = l;
            width = w;
        }
        function getArea() {
            return (length * width);
        }
        function getPerimeter() {
            return (2 * (length + width));
        }
        // This is the object to consist public members.
        // The rest are private members.
        var publicAPI = {
            create: create,
            getArea: getArea,
            getPerimeter: getPerimeter
        };
// To be returned upon creation of a new instance.
        return publicAPI;
    }
// Create a Rectangle module instance
    var myRect = Rectangle();
    myRect.create(5, 4);
    console.log("Area: " + myRect.getArea());
    console.log("Perimeter: " + myRect.getPerimeter());
```

OUTPUT:

```
Area       : 20
Perimeter  : 18
```

EXPLANATION:

- This JavaScript code defines a rectangle module with private variables for dimensions and methods to set them (create), calculate area (getArea), and calculate perimeter (getPerimeter). An instance is created, dimensions set to 5 and 4, and area/perimeter are displayed, showcasing encapsulation and modularity.

LOOPING IN JAVASCRIPT:

- Loops are used in JavaScript to perform repeated tasks based on a condition. Conditions typically return true or false . A loop will continue running until the defined condition returns false .
- **For Example**:
- The JavaScript for loop iterates the elements for the fixed number of times. It should be used if number of iteration is known. The syntax of for loop is given below.

```
 for (initialization; condition; Increment)
{


}
```

EXAMPLES:

CODING 1:

```
// Example 1: Using a for loop to print numbers 1 to 5
for (let i = 1; i <= 5; i++) {
  console.log(i);
}
```

OUTPUT:

```
1
2
3
4
5
```

CODING 2:

WHILE LOOP:

CODING

```
// Example 2: Using a while loop to print even numbers up to 8
let num = 2;
while (num <= 8) {
  console.log(num);
  num += 2;
}
```

OUTPUT:

```
2
4
6
8
```

CODING 3:

DO WHILE LOOP:

CODING:

```
// Example 3: Using a do-while loop to prompt for a positive number
let userInput;
do {
  userInput = prompt("Enter a positive number:");
} while (userInput <= 0);
console.log("You entered: " + userInput);
```

OUTPUT:

```
Enter a positive number:
Enter a positive number:
5
You entered: 5
```

These examples showcase different types of loops in JavaScript:

1. for loop: Iterates over a range of numbers (1 to 5) and prints each number.
2. while loop: Prints even numbers up to 8 by incrementing the variable num by 2 in each iteration.
3. do-while loop: Prompts the user for a positive number, repeating until a positive number is entered, and then displays the input.

Thank you